Testimony of
Bert Little
Tarleton State University
Director, Center for Agribusiness Excellence
for the Senate Committee on Agriculture, Nutrition, and Forestry
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Thank you for the opportunity to appear this morning before the Senate Committee on Agriculture, Nutrition, and Forestry to discuss the extension of the 2000 Agricultural Risk Protection Act (ARPA 2000), a vital legislative bulwark for rural America.

I.   WHO IS TESTIFYING

I am Bert Little, Associate Vice President for Research and Professor of Computer Science and Mathematics at Tarleton State University. Tarleton has been a member of the Texas A&M University System since 1917. In this role, I also direct the Center for Agribusiness Excellence (CAE), founded at Tarleton specifically to address a section of ARPA 2000 that directs the Secretary of Agriculture to use data mining and data warehousing to improve integrity and compliance in Federal crop insurance. As the Committee knows, program abuse was a central concern of both Congress and farm producers during the development of ARPA 2000. Testimony made clear that crop insurance abuse was hurting farmers everywhere by weakening program credibility and creating pressure for higher farmer-paid insurance premiums. The resulting statute contained several important planks to address this problem by tightening oversight and toughening penalties. Key among these was Section 515(f), which directs the Secretary to detect abuses by tracking agents, producers, and other program participants with disparate performance records and to provide Congress with an Annual Report on Program Compliance and Integrity Efforts. To accomplish these ends, Section 515(j)(2) on Information Management directs that

> "The Secretary shall use information technology known as data mining and data warehousing and other available information technologies to administer and enforce this title."

In open competition in July 2002, CAE won a five-year USDA contract to perform these tasks laid out in Sections 515(f) and 515(j)(2) of ARPA 2000. At the time, CAE had been working with RMA under a Cooperative Agreement from December 14, 2000 to research a report on disparate performance in the program. As a result, CAE now has built a record of more than five year of experience and accomplishment in this field and, working with RMA, has demonstrated how data mining techniques can dramatically improve program operation in real world practice. The results of CAE's work under ARPA 2000 were reported in RMA's Annual Reports on Program Compliance and Integrity Efforts, as required under Section 515(i) and cited below.

II.   HOW MUCH SAVINGS FOR USDA RMA

I say with some pride that the record of accomplishment by RMA and CAE under the data mining program has been formidable. In two of its reports issued so far on the program, for instance (Risk *Management Agency Program and Integrity June 2000 – December 2001* (http://www.rma.usda.gov/pubs/2002/ComplianceReport.pdf) and *Annual Report on Program Compliance and Integrity Efforts, Risk Management Agency: Preventing Fraud. Protecting Farms. Program Compliance and Integrity Annual Report to Congress. January 2002 – December 2002* (http://www.rma.usda.gov/pubs/2004/compliance2002.pdf), RMA reported that CAE saved the Federal Crop Insurance program respectively $72 million and $110 million during crop year 2001 and 2002 through indemnities not paid because of increased scrutiny of anomalous policies. In its draft Annual Report on Program Compliance and Integrity Efforts for January 2003 – December 2003 (not yet published) RMA will report that CAE's data mining effort saved the US crop insurance program $81 million for 2003. RMA Administrator Ross Davidson has reported similar levels of savings numerous times in testimony before Congress:

> "…in the first year of operation, data mining helped prevent nearly $94 million in improper payments and helped recover approximately $35 million in improper indemnities." (http://appropriations.house.gov/_files/RossDavidsonTestimony.pdf)

III.   HOW SAVINGS WERE ACHIEVED: DATA MINING AND WAREHOUSING

These savings were achieved through a number of coordinated initiatives, and I compliment RMA and its staff in its effective use of this new tool at its command compliance arsenal. At this point, CAE has developed a data warehouse that contains all RMA policy information from 1991 to the present (2005). In addition, CAE has integrated data on weather, soils, and other agronomically relevant factors into its warehouse. The total data in the warehouse is in excess of two terabytes (terabyte = 1 trillion words of information) and are standardized to the same scaling and format to allow multi-year analyses, previously not possible. The data warehouse is updated monthly by information provided from USDA RMA. The data warehouse is secured behind the USDA RMA firewall, subject to the same privacy and security protections as data maintained by USDA itself.

Through various programs and algorithms, we have worked with RMA to identify multi-year patterns that signal suspicious or anomalous crop insurance claims. One specific effort, called the Spotcheck List program, follows a simple process to translate this data into concrete program savings:

(1) Often using as a starting point anecdotes from the field (investigators, producers, agents, adjusters), we use our data mining system to identify schemes that appear to be in use to obtain possibly improper crop insurance indemnities through data mining;
(2) The potential scheme is analyzed to determine whether it exists in the national data, where, and to what extent. We include teams of RMA and CAE analysts to review the data and determine whether the scheme is reasonable or practical from an agricultural or field perspective;

(3) We place these schemes and the specific producers identified as having participated in them on a Spotcheck List. The list is deployed to USDA RMA Compliance staff which reviews it and may add additional persons of interest to it;

(4) The Spotcheck list is then provided to USDA's Farm Service Agency (FSA), whose local county offices are asked to conduct growing season inspections (GSIs) on the crop fields on the Spotcheck List;

(5) At an early point in the growing season, FSA sends letters, notifying each producer on the Spotcheck List that a GSI will be performed on their crop and an additional pre-harvest visit will be made.

IV.   BEHAVIOR CHANGES IN INDEMNITY

Not surprisingly, producers who are on the Spotcheck List react to the information by backing off any contemplated abusive activities, resulting in drastic, visible, measurable improvements in program performance.   Growers change their behavior as a result of simply knowing that they are being scrutinized. In most cases, (see Figure 1) the effect lasts for two years. A small proportion (one-fifth) changes their behavior only one year (Figure 2).
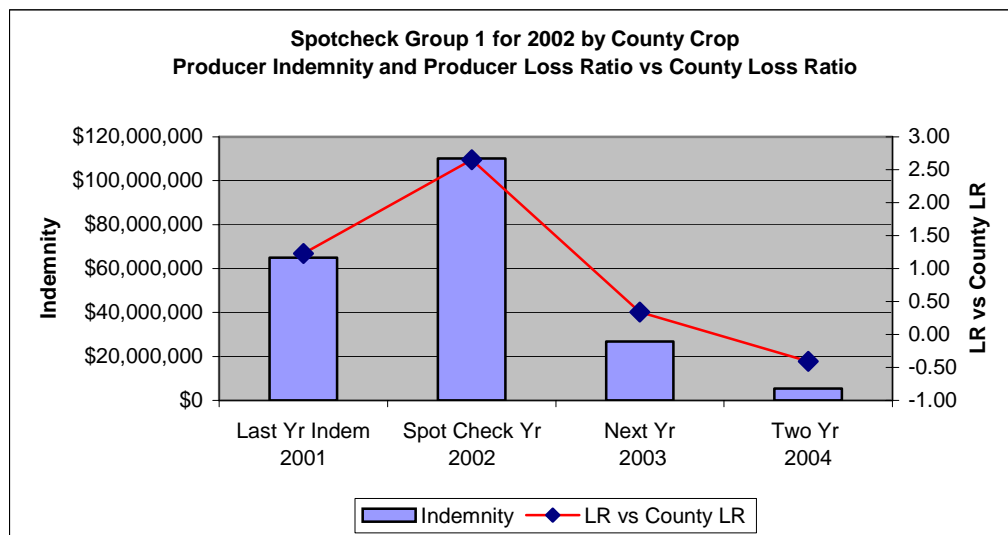

FIGURE 1. Spotcheck List for Group 1, Indicating Marked Decreases in Indemnity for The Same Producers Followed Over Time

Figure 1 tracks the group of policies on the Spotcheck List in 2002, and shows the dramatic decreases in indemnities paid to those producers in 2003 as well as similar decreases in 2004. This indicates a decrease of almost $100 million from 2002 to 2003. Note that Figure 1 has a heading of "Spotcheck Group 1," which comprises approximately two-thirds of the people on the Spotcheck List.
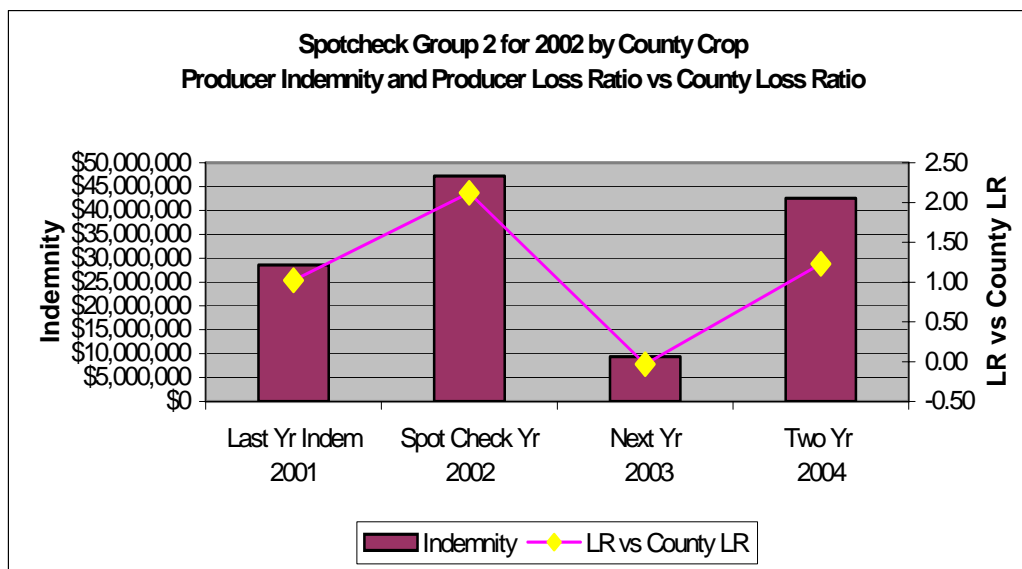
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Spotcheck Group 2 for 2002 by County Crop
Producer Indemnity and Producer Loss Ratio vs County Loss Ratio

FIGURE 2. Spotcheck List for Group 2, Indicating Marked Decreases in Indemnity for The Same Producers <u>For Only One Year</u>

Figure 2 tracks the group of policies that were on the Spotcheck List in 2002 and shows a similar pattern: dramatic decreases in 2003 for only one year, though no similar decreases when followed to 2004. This indicates a decrease of almost $40 Million from 2002 to 2003. Note that Figure 2 has a heading of "Spotcheck Group 2," which comprises approximately one-fifth of the policies on the Spotcheck List. Policies in Spotcheck Group 2 returned to their prior indemnification behavior after only one year.   Altogether, over four years (2001 to 2004), this one initiative, the Spotcheck List, produced indications of reduction in unneeded indemnities of approximately $316 million.

V.   OTHER COST SAVINGS ACTIVITIES BY CAE

CAE produces more than the Spotcheck List for RMA Compliance. During 2004 we produced 115 additional research products at the request of USDA RMA aimed at identifying program abuse, each laying the groundwork for additional cost savings. In addition, we have used our data mining tools to assist the USDA Office of Inspector General (OIG) in its investigations and audits of USDA programs, the Government Accountability Office (GAO), plus the work of Federal prosecutors and the Federal Bureau of Investigation (FBI).   CAE personnel also have served as expert witnesses for Federal prosecutors when requested.

VI.   COST BENEFIT CONSIDERATIONS

We believe that data mining as mandated under ARPA 2000 has been a dramatic success for Congress and USDA.   For an investment of $16,004,784.65, it has conservatively produced program savings of over $300 million from December 14, 2000 through May 31, 2005, just looking at the Spotcheck List alone.   The pubic interest argues strongly that it should and must be continued.

VII. FUTURE OF CAE

At this point, however, despite wide support for data mining and a strong record of accomplishment, the future of the program remains much in doubt. ARPA 2000 provided funding for data mining through the Federal crop insurance fund rather than through annual agency appropriations. This funding provision from ARPA 2000 is due to expire in fiscal year 2005. To bridge the gap until Congress determines whether to extend the provision, the President has requested in his 2006 budget a single-year funding bridge at $3.6 million, and recently the House Appropriations Committee provided this amount but with a caveat stating as follows: "While the Committee provides the budget authority to extend this program through the end of fiscal year 2006, the Committee will not fund this program in the future."

We hope that Congress will find an appropriate method to continue the ARPA 2000 data mining program beyond fiscal 2006, preferably by funding it on a multi-year basis through the Federal Crop Insurance fund, extending the system that has worked so well over the past four years under the original statute. Otherwise, if this program is allowed to expire or lapse into uncertainty, a significant amount of program savings, as well as a working, effective tool against program abuse, inevitably will be lost. This would be a severe setback for Federal crop insurance, farm producers, and American taxpayers. We stand ready to work with you to help address this issue.

VIII. SUMMARY

Thank you again for giving us this opportunity to summarize CAE's record of providing cost savings to the Federal crop insurance program under the ARPA 2000 data mining program. Congress and USDA deserve a great deal of credit for taking the bull by the horns and implementing this program in an effective way to the benefit of farmers and taxpayers. We have been honored to be part of the process.